

DC T

Digital Component Technology

AMPEX

THE SECRET OF DCT ENGINEERING: PRECISION MECHANICS.

The Innovation That Started It All.

On November 30, 1956, CBS Television City in Hollywood aired its "Douglas Edwards and the News" program to the West Coast—recorded three hours earlier on an Ampex video recorder.



This was the world's first coast-to-coast network television broadcast pre-recorded on videotape. And it marked one of the most significant turning points in modern technological history.

One of the keys to this revolution was a technique that Ampex engineers had devised just a year earlier. It was called FM video recording. And it's the foundation of all video recording to this day.

Earlier attempts to produce acceptable video signals on tape (also conducted by Ampex in the early 1950's) employed amplitude modulation (AM) techniques, just like those used in radio. But AM recording simply can't reproduce the extremely wide video bandwidth, 225 times that of the highest quality professional audio recorder.

Ampex, however, developed an ingeniously simple method for frequency modulating a carrier with the video signal, thereby avoiding the image-destroying noise produced by amplitude variations and, more importantly, reducing the bandwidth requirements from 18 octaves to 1 octave.

The result was the world's first practical videotape recorder. And the first of Ampex's 11 Emmy Awards for Technical Achievement and numerous world-wide patents.

Videotape recording is a mechanical process.

The best electronics in the world are compromised without precision mechanics.

That's why we built upon the engineering reputation we established with Ampex's VPR[®]-3 and VPR-300 to give the DCT 700d tape drive the most advanced mechanical platform in the world.

And it has to be. Digital recording demands tight tolerances, and those tolerances must be maintained shuttle after shuttle, hour after hour, day after day.

Yet for all this ruggedness, the drive must also handle ultra-thin tapes with unerring precision.

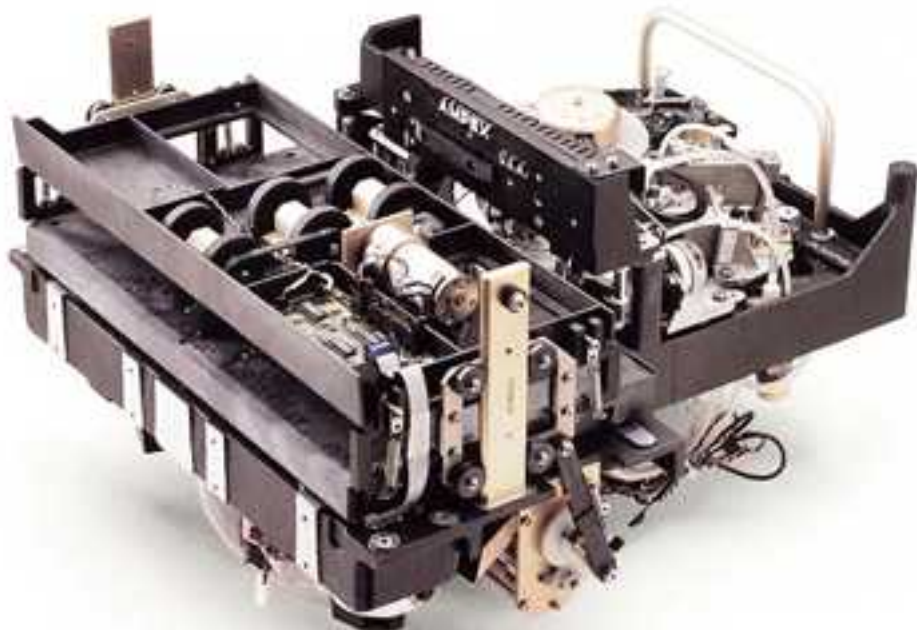
So we designed the DCT 700d with frictionless air-lubricated tape guides and eliminated the pinch

roller used in less-sophisticated tape drives, resulting in the gentlest tape handling in the world. This allows the tape to be accelerated to full wind speed in less than one second.

And, because the drive employs both co-planar and helical threading, it can read timecode without the tape touching the video heads, reducing wear and tear on the tape, heads, and your valuable time.

This attention to precision engineering doesn't stop with the drive. The DCT 700t tape cartridge has been exactly designed to meet the tight tolerances and demanding loads of the drive. The result is precise, dependable, repeatable performance.

And when it's your production on the line, your clients shouldn't accept anything less.



THE SECRET OF DCT ENGINEERING: PRECISION ELECTRONICS.

Videotape recording is an electronic process.

The most accurate drive mechanism in the world is compromised if the video signals aren't processed with absolute purity and integrity.

That's why the DCT 700d tape drive employs the most advanced electronics in the industry.

This, too, is an Ampex tradition. Our ADO® digital effects system revolutionized video over a decade ago as the first real-time 3-D special effects device, a breakthrough in electronics engineering.

Our Zeus™ advanced video processor revolutionized the industry again by bringing incredible transparency to analog recording with digital technology, and with bounceless variable-speed playback and editing.

And now our DCT electronics promise yet another revolution

by incorporating advanced digital signal processing technologies we developed with ADO and Zeus. It also includes other techniques such as our proprietary spatial filtering and unique error-correction processes developed by our data recording engineers.

This marks the true merging of video and computer technologies from Ampex, always the leader in advanced technology for both industries.

In fact, our computer memory systems are installed at some of the world's most advanced supercomputing facilities, such as those at the National Center for Atmospheric Research.

A lot of people are talking about the merging of video and computer technologies in the future, but Ampex does it today—with DCT.

Some Facts About ASICs.

ASICs—Application Specific Integrated Circuits—are complex integrated solid-state electronic devices. They are custom-designed for specialized functions, and operate faster, with less power, in a smaller space, and more reliably than older discrete components.

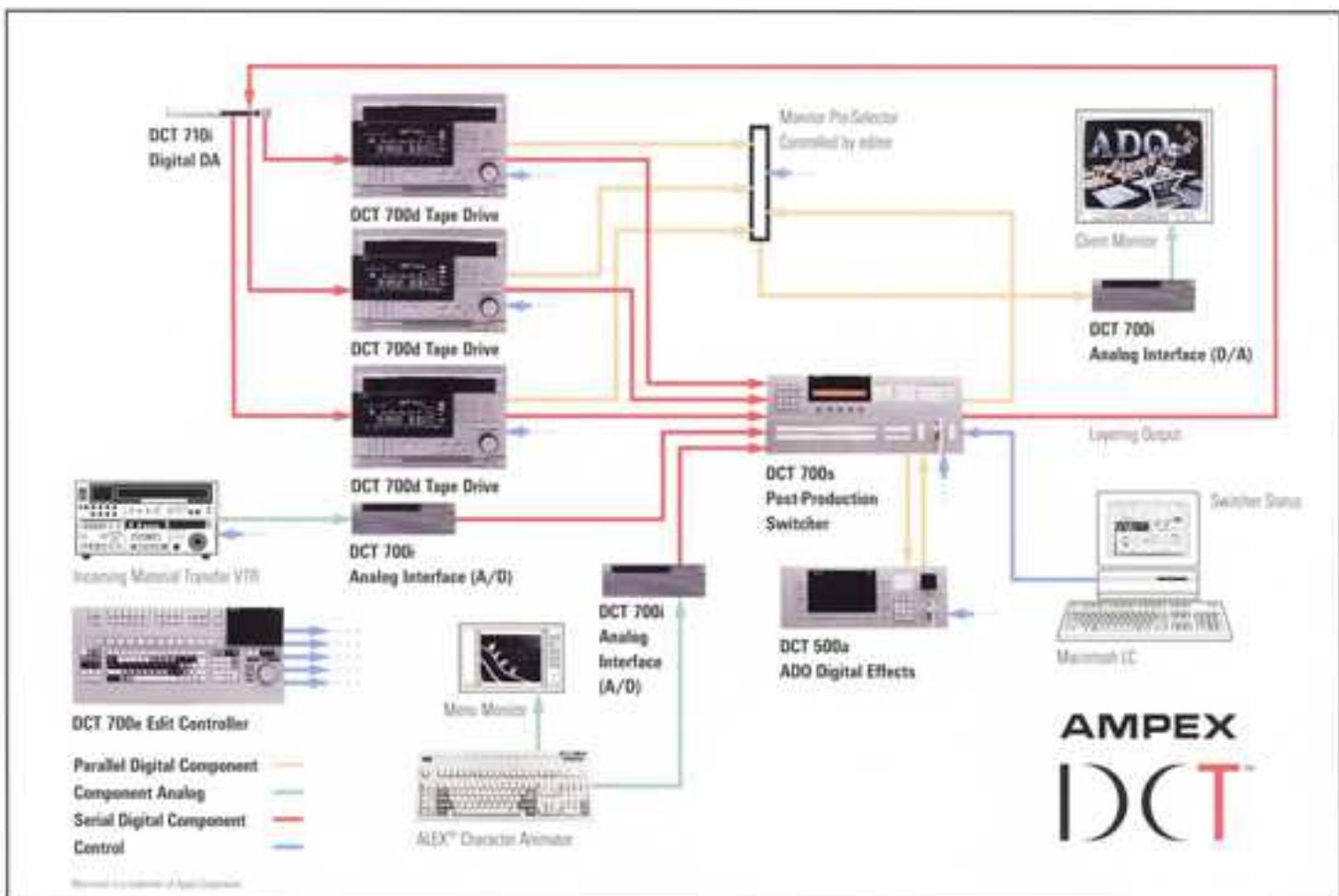
ASICs are one of today's most critical design technologies.

And the DCT 700d contains over 100 ASICs, all designed by Ampex engineers exclusively for this machine.



Ampex is one of the few video companies in the world that has its own ASIC design center. In fact, only a handful of semiconductor manufacturers have a facility this advanced. It is this kind of commitment to leading-edge technologies that sets DCT apart from all others.

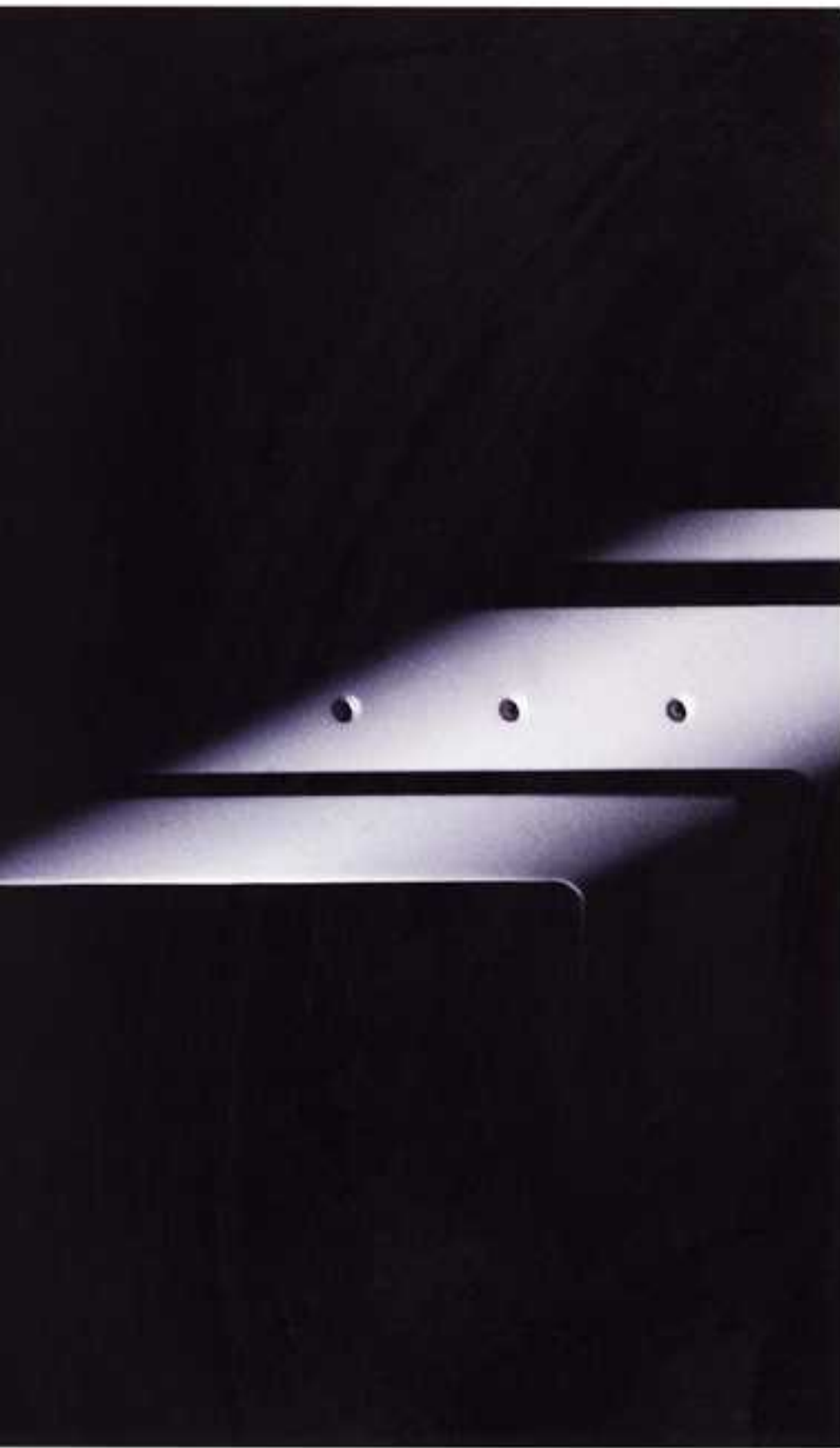
DCT SYSTEM DIAGRAM.



DCT was conceived and designed as a system, the key components all optimized to each other for seamless, flawless performance.

We also recognize, however, that no matter how compelling the digital component environment offered by DCT might be, signals may still have to come from and return to the analog environment in many post-production facilities.

That's why Ampex has also designed and developed the interconnect system to ensure that your DCT system will deliver its full power and flexibility.



In The Beginning...Was Ampex.

1948: *Ampex introduces the first practical audio tape recorder.*

1956: *Ampex introduces the first practical videotape recorder ("Quad").**

1961: *Ampex introduces helical-scan recording, the technological breakthrough that leads to the consumer video revolution.*

1964: *Ampex introduces the first electronic video editor.*

1965: *Ampex introduces high-band color videotape recording.**

1967: *Ampex introduces instant replay with stop-action, slow-motion, and color.*

1971: *Ampex introduces the ACR-25, the first automated cassette library system for the recording and playback of commercial spots.*

1977: *Ampex introduces Electronic Still Store.**

1978: *Ampex introduces 1" Type C recording.**

1978: *Ampex introduces AST[®] Automatic Scan Tracking, bringing variable-speed effects to Type C machines.**

1981: *Ampex introduces the first 3-dimensional digital video effects system, ADQ[®].**

1985: *Ampex introduces Zeus[™], the advanced digital picture processor/time base corrector for analog environments.**

1986: *Ampex introduces the ACR-225, the first commercial spot player using composite digital technology.**

1988: *Ampex introduces the D-2 composite digital recording format.**

1992: *Ampex introduces DCT, Digital Component Technology, the next video revolution.*

**Awarded an Emmy for Technical Achievement by The National Academy of Television Arts and Sciences*



AMPEX PRODUCTS.

In addition to DCT, Ampex has introduced Data Storage Technology, DST.[™] Based on the same robust 19mm tape drive used in DCT, the DST system allows high performance computing and high capacity data storage, back up, and archiving applications to deliver their full performance potential with levels of throughput (data transfer rates) and capacity unprecedented in the industry.

DCT and DST are just two examples of Ampex's world leadership in the recording, storing, and retrieving of information and images for the television, data, and instrumentation markets.

DATA RECORDING AND INSTRUMENTATION EQUIPMENT

DST[™] Data Storage Products

- DST 800 Series Automated Cartridge Library
- DST 600 Series Tape Drive
- DST 600 Series Tape Cartridge (25, 75, 165 GB)

Instrumentation

- DCRSi[™] Digital Cassette Recording System
(The world's leading compact, rugged, high bit rate data recorder available in both airborne and laboratory versions)
- ID-2 Recording System
(A high speed helical-scan data recorder)

TELEVISION, BROADCAST, AND POST-PRODUCTION EQUIPMENT

Video Recorders

- VPR-300 Series D-2 VTRs
- VPR-200 Series D-2 VTRs
- VPR-6 Type C Studio Recorder
- Betacam SP Studio and Portable VTRs
- Betacam SP Cameras and Camera-Recorder Systems
- Zeus[™] Advanced Video Processor

Automated Recorders

- ACR[™]-225 Automated Cassette Recorder/Player

Graphics Systems

- ALEX[™] Character Animator

Special Effects

- ADO[®] Digital Video Effects Systems

Switchers

- Century[™] Series Production Switchers
- Vista[™] Compact Production Switchers
- ADAPT[™] Composite Digital Layering Device

ACE[®] Editors

- ACE 25 Computerized Edit Controller

RECORDING MEDIA

Videotape

- 398 Betacam SP
- 208 Betacam
- 329 D-2 Digital 19mm
- 229 D-1 Digital 19mm
- 297 U-matic SP
- 197 U-matic
- 296 1" Type C Editing Series
- 196 1" Type C

Audio Tape

- 456 Grand Master[®]
- 499 Grand Master Gold[™]
- 467 Digital Mastering

Instrumentation

- 705 Logging
- 733 DCRSi Cassettes
- 731 DCRSi Cassettes
- 721 High Energy PCM
- 799 Standard Energy PCM
- 797 Wideband
- 767 Intermediate Band

WELCOME TO THE CHANGING WORLD OF VIDEO.

You're about to experience what the last four decades of video technology have been leading up to. To discover tools that will give you the power to create video with unsurpassed clarity, crispness, and multigenerational integrity. To unleash a level of creative freedom and flexibility you may have never thought possible—much less attainable.

This is a new chapter in video history. This is DCT.[™] Digital Component Technology from Ampex.

AMPEX SALES OFFICES

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